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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,728	06/27/2003	Neal C. Oliver	42P16530	6497
8791 7590 08/27/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040			EXAMINER DUONG, DUC T	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 08/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

SK

Office Action Summary	Application No.	Applicant(s)	
	10/607,728	OLIVER ET AL	
	Examiner	Art Unit	
	Duc T. Duong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 16-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding to claim 16, the descriptive material of the claim can be characterized as "functional descriptive material". In this context, "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions". The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).). Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. See the following interim guidelines for further details:

http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claim 16, the specification fails to provide an adequate written support for "machine accessible medium". Furthermore, it is unclear as to what the "machine accessible medium" encompass.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 2, 4-6, 9-13, 15-19, 21-24, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (US Patent 6, 975,638 B1).

Regarding to claims 1, 11, 16, and 23, Chen discloses an apparatus (fig. 7) comprising a classification unit C1-2 to examine packets received from a network (col. 7 lines 22-26), determine a path (egress port/destination port) to be taken by each packet through a switch fabric 70 (col. 7 lines 26-29), and classify each packet into one of a plurality of flow bundles based on the packet's destination and path through the switch fabric (col. 7 lines 29-45); a mapping unit (CAM) coupled to the classification unit to place each packet into one of a plurality of queues F1-2 based on the flow bundle to which the packet has been classified (col. 7 lines 29-45); one or more traffic shapers 124-126 coupled to the mapping unit to regulate the rate at which traffic moves out of the queues (col. 7 lines 52-67 and col. 8 lines 1-25); and a scheduler 136 coupled to the traffic shapers to regulate the order in which packets in the queues will be transmitted to a next destination through the switch fabric (col. 8 lines 45-52).

Regarding to claims 2, 17, and 24, Chen discloses regulating the rate at which traffic moves out of the queues with a traffic shaping algorithm (col. 7 lines 52-62).

Regarding to claims 4, 15, 18, and 26, Chen discloses labeling each packet with information identifying an associated flow and flow bundle (col. 7 lines 41-43).

Regarding to claims 5 and 21, Chen discloses classifying each packet into one of a plurality of flow bundles based on the packet's destination, path through the switch fabric, and priority (col. 7 lines 29-37).

Regarding to claim 6, Chen discloses scheduling the packets in the queues for transmission using a Round Robin scheduling algorithm (col. 7 lines 46-49).

Regarding to claims 9 and 19, Chen discloses determining which traffic class each received network packet belongs based on protocols associated with the packet (col. 2 lines 3-8).

Regarding to claims 10, 13, and 22, Chen discloses forwarding the packets to a switch 80 coupled to the switch fabric for transmission to the next destination (fig. 3 col. 5 lines 49-51).

Regarding to claim 12, Chen discloses an access unit L1-2 coupled to the classification unit to receive packets from and transmit packets to the network (col. 7 lines 13-21).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 14, 20, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Hooman et al (US Patent 7, 155,716 B2).

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Regarding to claims 3, 14, 20, and 25, Chen et al discloses all the limitations with respect to claims 1, 11, 16, and 23, except for the classification unit comprises a load balancing element to determine a path to be taken by each packet through a switch fabric based on load balancing. However, Hooman discloses a method and system for scheduling transmission of packets comprising a classifier 314 that serve to provide load balancing (fig. 3 col. 3 lines 47-49). Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to employ such classifier as taught by Hooman in Chen's system to avoid overflow in the queues.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Duffield et al (US Patent 6,452,933 B1).

Regarding to claims 7 and 8, Chen et al discloses all the limitations with respect to claim 1, except for scheduling the packets in the queues for transmission comprises scheduling the packets in the queues for transmission using a Longest Delay First algorithm (claim 7) or a Stepwise QoS Scheduler SQS (claim 8). However, Duffield discloses a method and apparatus for routing packets in a communication network comprising a scheduler 200 implementing the Longest Delay First algorithm and the Least Time to Overflow algorithm (fig. 2 col. 5 lines 4-25). Thus, it would have been obvious to a person of ordinary skill in the art to employ such scheduler as taught by Duffield in Chen's system for delivery of packets having various properties and criteria requirements.

Response to Arguments

10. Applicant's arguments filed June 14, 2007 have been fully considered but they are not persuasive. Regarding to applicant's argument on pages 8-9, Chen fails to teach for mapping packets into queues based on each packet's destination and path through a switch fabric. In response, examiner would like to direct applicant's attention to col. 7 lines 22-45. Herein, Chen discloses when a packet arrive a look-up operation in the CAM is perform. The CAM look-up returns both the switching fabric egress port SPort and the destination port of the line card for the packet. Several other packet classification parameters are also determined during the look-up, such as traffic class, or queuing priority, queues associated with the SPort, etc. All these result are bundled in an internal-use header and prepended to the data packets in FIFO. Thus, Chen indeed discloses of mapping packets into queues based each packet's destination and path through the switch fabric. Regarding to applicant's argument that Chen discloses the data packets are not mapped to queues based on their destination or egress port until the packets reach MMU 132. In response, examiner would like to point out the claims does not specified the mapping is done before or after, there are no exclusions to when the mapping is perform. Regarding to applicant's argument on fails to teach for regulating the rate at which traffic moves out of the queues. In response, examiner would like to direct applicant's attention to col. 7 lines 52-62 and col. 8 lines 13-25. Herein, Chen discloses traffic monitor 124 detects whether traffic from a particular's class exceed a peak rate or committed rate. If so, traffic monitor 124 notified the traffic conditioner 126. Once the traffic conditioner 126 receives the rate violation notification

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from the traffic monitor 124, the traffic conditioner implements a RED processing, wherein packets marked with such violation are discard before it reach the MMU 132. Therefore, the rates at which the packets admitted to packet pipeline 122 (move out of queues F1 and F2) are regulate by the traffic monitor 124 and traffic conditioner 126. Thus, Chen indeed discloses of regulating the rates at which traffic moves out of the queues. Based on the reasons set forth here the rejections are maintained.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Duong whose telephone number is 571-272-3122. The examiner can normally be reached on M-F (9:00 AM-6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD


WING CHAN
SUPERVISORY PATENT EXAMINER

8/23/07